

Airborne Transmission of COVID-19

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Dear Editor,

We are concerned that the commentary “It is Time to Address Airborne Transmission of COVID-19 (1)” has caused significant confusion. We agree that there is a gradient from large droplets to aerosols, and in experimental conditions, and possibly in poorly ventilated indoor crowded environments, there is potential for the transmission by aerosols. Furthermore, we agree that the availability of adequate ventilation indoors, and the use of outdoor space, have validity in preventing transmission. However, we argue the epidemiologic data and clinical experience managing the pandemic continue to support that the main mode of transmission of SARS-CoV-2 is short range through droplets and close contact (2).

The concerns raised by these authors are not borne out in clinical experience. Long-range transmission beyond 2 meters in the over 10,000 patients with COVID-19 hospitalized nationally in Canada and elsewhere seems rare at best. Current policies in many international jurisdictions recommend droplet/contact precautions for routine care of patients with suspected or confirmed COVID-19 and the addition of airborne precautions only for aerosol-generating medical procedures (AGMP) (3). Epidemiologic studies support this approach and even suggest that AGMP transmission risk may be overestimated (4).

In the case of the healthcare environment, we do not find any convincing evidence in this review to change occupational health and infection control practices. In contrast, there have been published real world experiences where despite significant aerosol generation, rates of transmissions have been minimal. The first community acquired COVID-19 case in the USA underwent multiple high-risk prolonged AGMPs (5). Despite 121 exposures without N95 respirators, only 3 (2.5%) healthcare workers acquired SARS-COV-2, two of which did not wear any respiratory protection at all, and the third wore a surgical mask intermittently. In Singapore, 41 healthcare workers were exposed to multiple prolonged AGMPs in a COVID-19 patient, only 6 wore N95 respirators (6). On serial testing, no staff acquired COVID-19. The above described observational case reports substantiate the Canadian experience, where COVID-19 patients are routinely managed in droplet/contact precautions and there has been no increased risk of infections in health care workers when compared to community populations (7).

Published case series of non-health care settings confirm the findings of droplet/contact transmission including a flight where only a single adjacent passenger was secondarily infected (8), and a cluster of infections at a call center related to close contact within a building (9), as well as multiple household contact studies with secondary attack rates of under 20% (10).

Evidence-based policy around infection prevention should be informed by research from the physical sciences, biology, and epidemiology with consideration of real-life aspects. We commend the authors for highlighting relevant experimental evidence. However without reconciling with the clinical real-world experience of COVID-19, the authors draw premature conclusions about the importance of airborne transmission. This has resulted in confusion and fear in the general public, mistrust in healthcare workers and a risk of a deepening divide between experimental scientists and healthcare epidemiologists.

Potential Conflicts of Interest

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